

# Work Order ID 52743

October 13, 2009 2:30:19 PM



Page 1

Item ID: D206-667-203TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 14/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 30/10/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

*[Signature]*

Date:

09-10-13

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D206-667-243	Rev C

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA089□2-Turn first side as per Folio FA089□3-File down transition lines smooth.

G.M 09-10-22①

110

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

G.M 09-10-22①

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA089□2-File down transition lines smooth.  
□  
3-Remove sand and plugs□4-Scrib part# and batch #

G.M 09-10-20①

**Work Order ID 52743**

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Page 2

Item ID: D206-667-203TRN

Accept

Revision ID: C

Item Name: Crosstube Turning Detail

Start Date: 14/10/2009 Start Qty: 1.00

Required Date: 30/10/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

0.00 09-10-22

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

1 - 1409.10.26

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

SAD

09-10-26

①

# Work Order ID 52743

October 13, 2009 2:30:19 PM

Page 3

Item ID: D206-667-203TRN

Accept

Revision ID: C

Item Name: Crosstube Turning Detail

Start Date: 14/10/2009 Start Qty: 1.00

Required Date: 30/10/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:


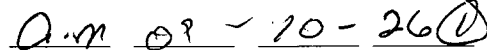



Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00							<u>A.M 09-10-26</u> 
170  Packaging Packaging	Packaging  Memo Identify and Stock in kanban rack <input type="checkbox"/> Location: <u>crosstube</u>	0.00  0.00							 <u>SAB</u> <u>09-10-26</u>
180  QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							<u>09-10-27</u> <u>09-10-27</u>

# Picklist Print

Page 1

October 13, 2009 2:30:25 PM

Work Order ID: 52743



Parent Item: D206-667-203TRNRevC



Parent Item Name: Crosstube Turning Detail

Start Date: 14/10/2009

Required Date: 30/10/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D6004-115RevA		Manufactured	No			100	Each	72.0000	1.0000			
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Crosstube Material



*Q. n 09-10-220*

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

72

34685

17

34774

24

38336

31

\_\_\_\_\_  
\_\_\_\_\_  
*1*  
\_\_\_\_\_

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

# **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6004-115  
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON  
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,  
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE  
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER  
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE  
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE  
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN  
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

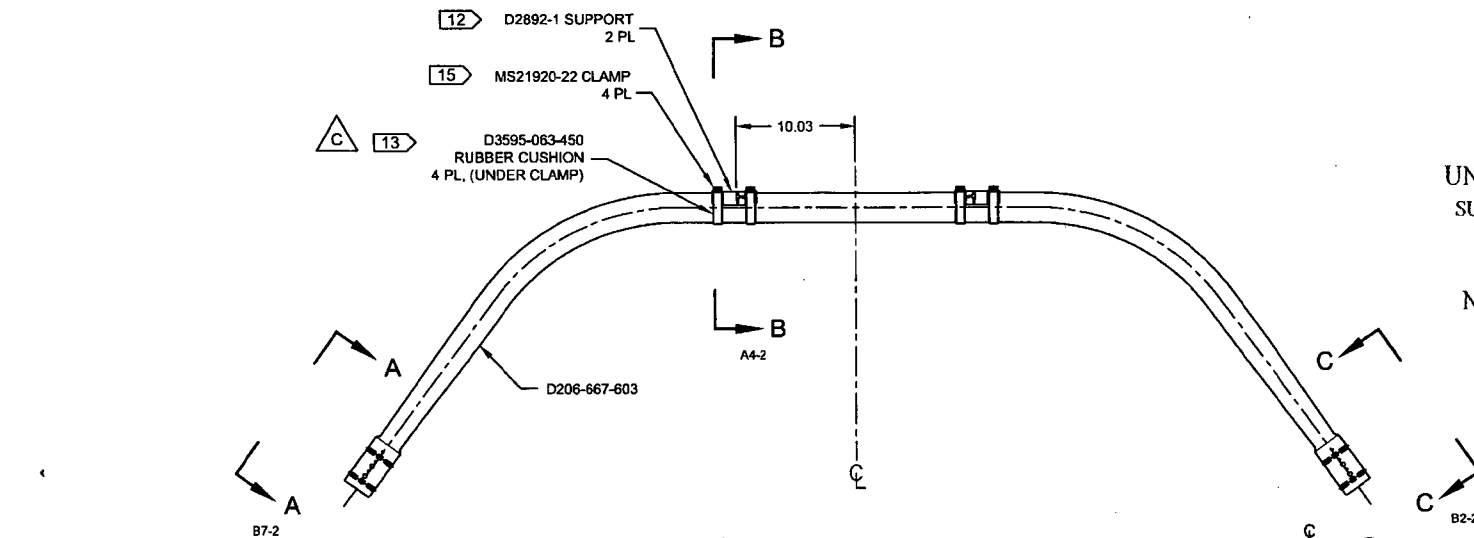
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WORK ORDER  
NO. 52743  
*0210-13*

**RELEASED**  
*06/11/12*

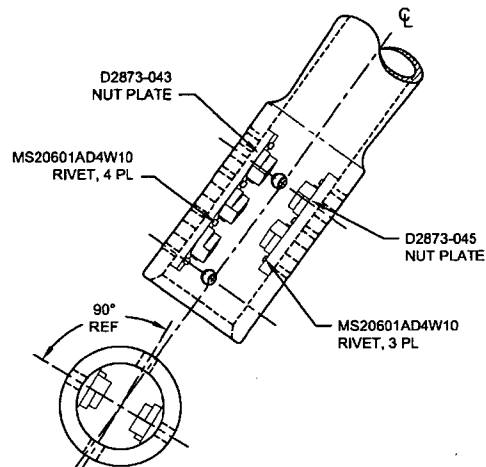
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D8-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>RF</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>RF</i>	DRAWING NO.	REV. C
CHECKED	<i>RF</i>	D206-667-243	SHEET 1 OF 4
MFG. APPR.	<i>RF</i>	TITLE	SCALE
APPROVED	<i>RF</i>	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DE APPR.	<i>RF</i>	COPYRIGHT © 2006 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

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NO. 52743  
PL 09-10-13

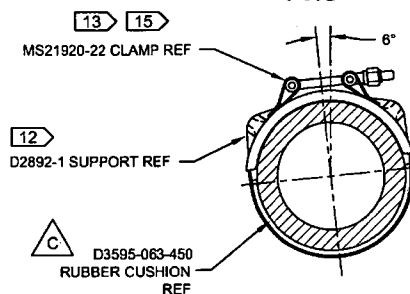
**RELEASED**  
*01/12/13*



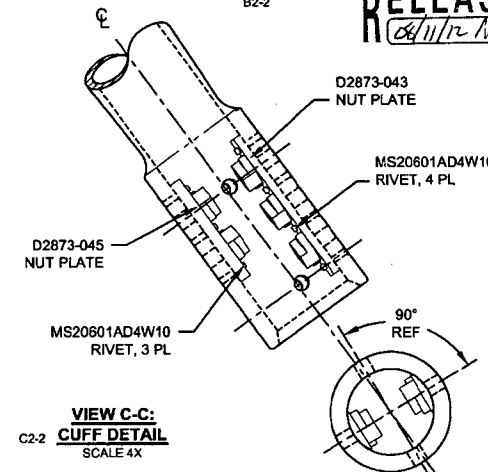
**D206-667-243**  
**ASSEMBLY DETAIL**  
(VIEW LOOKING FWD)



**VIEW A-A:**  
**CUFF DETAIL**  
SCALE 4X



**SECTION B-B**  
SCALE 5X

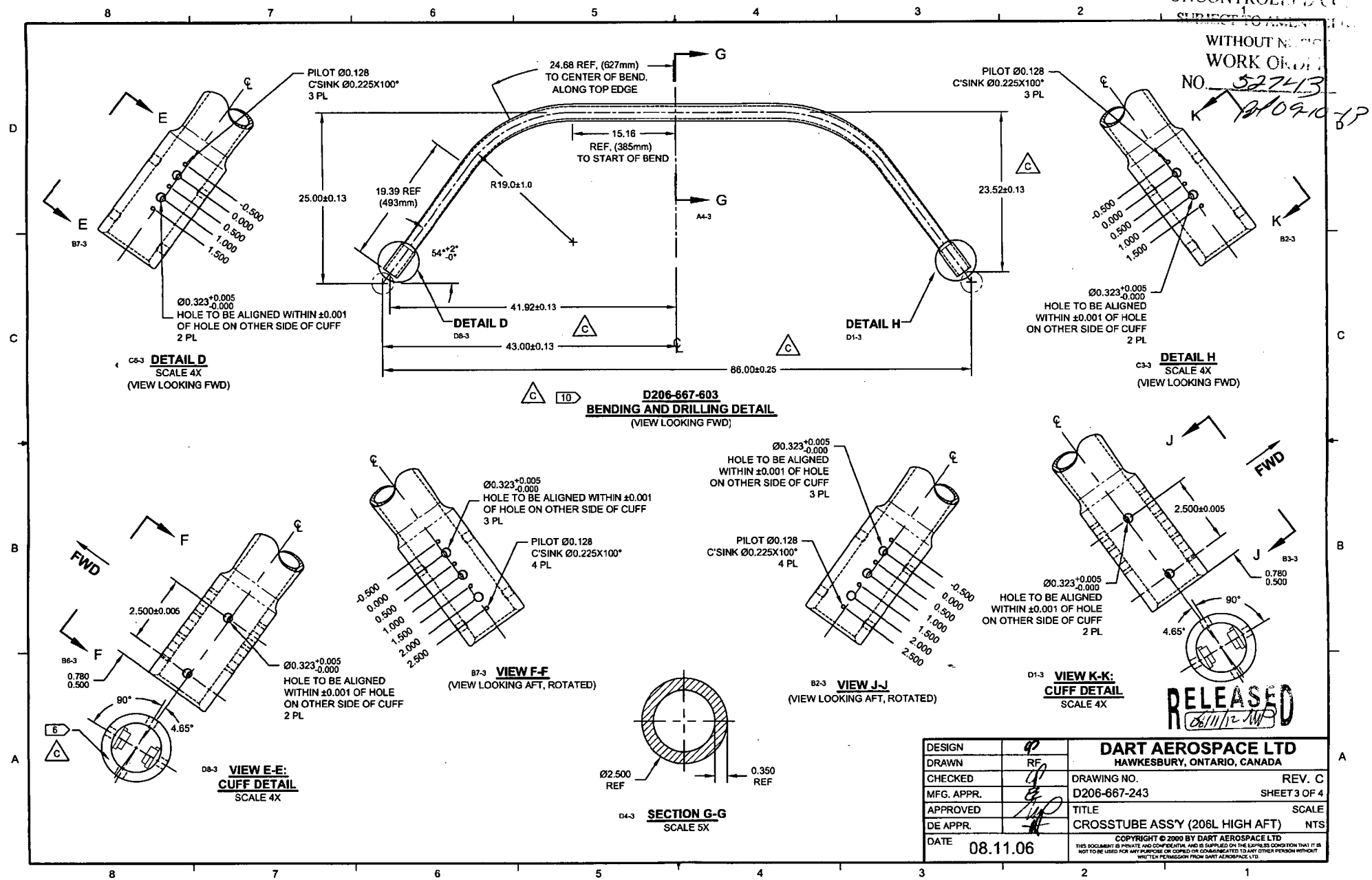


**VIEW C-C:**  
**CUFF DETAIL**  
SCALE 4X

DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 2 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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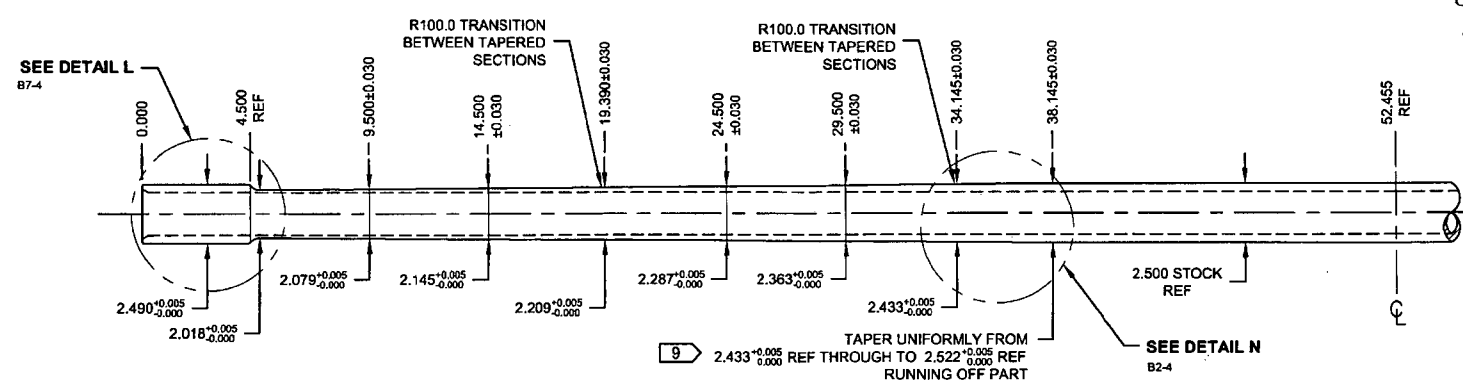
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WORK ORDER NO. 522413  
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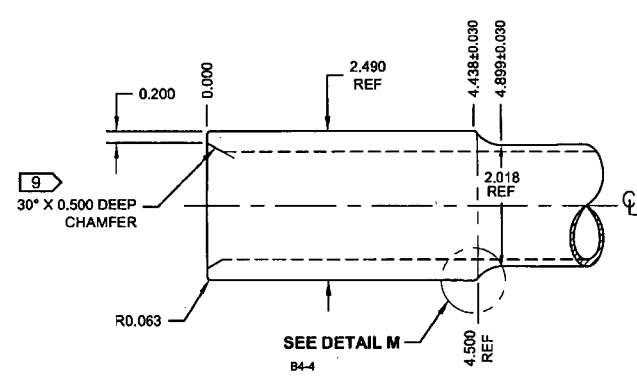


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08/11/06

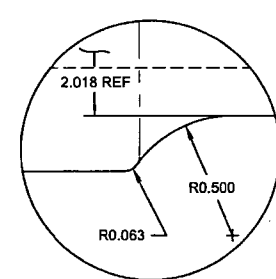
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WORK ORDER NO. 52743  
B109-10-13



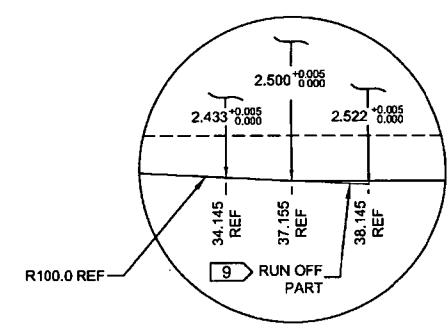
**C TURNING DETAIL**



**C7-4 DETAIL L: CROSSTUBE CUFF**  
NOT TO SCALE



**B6-4 DETAIL M: CUFF TRANSITION**  
NOT TO SCALE



**DETAIL N: TAPER RUN-OFF**  
NOT TO SCALE

**RELEASED**  
08/11/12

DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 52743
<b>Description:</b> Crosstube Assembly		<b>Part Number:</b> D206-667-243
<b>Inspection Dwg:</b> D206-667-243 <b>Rev:</b> B		<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.495	/			
	2.018	+0.005/-0.000	2.023	/			
	2.079	+0.005/-0.000	2.084	/			
	2.145	+0.005/-0.000	2.150	/			
	2.209	+0.005/-0.000	2.214	/			
	2.287	+0.005/-0.000	2.291	/			
	2.363	+0.005/-0.000	2.368	/			
	2.433	+0.005/-0.000	2.438	/			
	0.200	+/-0.010	0.200	/			
	0.500 x 30°	+/-0.010	0.500x30°	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.438	+/-0.030	4.438	/			
SIDE B	104.91	+/-0.020	104.910	/			
	2.490	+0.005/-0.000	2.495	/			
	2.018	+0.005/-0.000	2.023	/			
	2.079	+0.005/-0.000	2.084	/			
	2.145	+0.005/-0.000	2.150	/			
	2.209	+0.005/-0.000	2.214	/			
	2.287	+0.005/-0.000	2.293	/			
	2.363	+0.005/-0.000	2.368	/			
	2.433	+0.005/-0.000	2.438	/			
	0.200	+/-0.010	0.200	/			
	0.500 x 30°	+/-0.010	0.500x30°	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.438	+/-0.030	4.438	/			

<b>Measured by:</b> G.A	<b>Audited by:</b> AWM	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 09-10-22	<b>Date:</b> 9-10-26	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.01	New Issue (P/O D206-667-203)	KJ/JLM	